



MASSACHUSETTS

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Medical Policy

Esophageal pH Monitoring

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Policy Number: 069

BCBSA Reference Number: 2.01.20

Related Policies

None

Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO BlueSM and Medicare PPO BlueSM Members

Esophageal pH monitoring using a wireless or catheter-based system may be considered **MEDICALLY NECESSARY** for the following clinical indications in adults and children or adolescents able to report symptoms*:

- Documentation of abnormal acid exposure in endoscopy-negative patients being considered for surgical anti-reflux repair,
- Evaluation of patients after anti-reflux surgery who are suspected of having ongoing abnormal reflux,
- Evaluation of patients with either normal or equivocal endoscopic findings and reflux symptoms that are refractory to proton pump inhibitor therapy,
- Evaluation of refractory reflux in patients with chest pain after cardiac evaluation and after a 1-month trial of proton pump inhibitor therapy,
- Evaluation of suspected otolaryngologic manifestations of GERD (i.e., laryngitis, pharyngitis, chronic cough) that have failed to respond to at least 4 weeks of proton pump inhibitor therapy, or
- Evaluation of concomitant GERD in an adult-onset, non-allergic asthmatic suspected of having reflux-induced asthma.

24-hour catheter-based esophageal pH monitoring may be **MEDICALLY NECESSARY** in infants or children who are unable to report or describe symptoms of reflux with:

- Unexplained apnea,
- Bradycardia,
- Refractory coughing or wheezing, stridor, or recurrent choking (aspiration),
- Persistent or recurrent laryngitis,
- Recurrent pneumonia.

Catheter-based impedance-pH monitoring is [NOT MEDICALLY NECESSARY](#).

*Esophageal pH monitoring systems should be used in accordance with FDA-approved indications and age ranges.

Prior Authorization Information

Pre-service approval is required for all inpatient services for all products.

See below for situations where prior authorization may be required or may not be required for outpatient services.

Yes indicates that prior authorization is required.

No indicates that prior authorization is not required.

	Outpatient
Commercial Managed Care (HMO and POS)	No
Commercial PPO and Indemnity	No
Medicare HMO BlueSM	No
Medicare PPO BlueSM	No

CPT Codes / HCPCS Codes / ICD-9 Codes

The following codes are included below for informational purposes. Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member. A draft of future ICD-10 Coding related to this document, as it might look today, is included below for your reference.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

CPT Codes

CPT codes:	Code Description
91010	Esophageal motility (manometric study of the esophagus and/or gastroesophageal junction) study with interpretation and report;
91013	Esophageal motility (manometric study of the esophagus and/or gastroesophageal junction) study with interpretation and report; with stimulation or perfusion (eg, stimulant, acid or alkali perfusion) (List separately in addition to code for primary procedure)
91034	Esophagus, gastroesophageal reflux test; with nasal catheter pH electrode(s) placement, recording, analysis and interpretation
91035	Esophagus, gastroesophageal reflux test; with mucosal attached telemetry pH electrode placement, recording, analysis and interpretation

ICD-9 Diagnosis Codes

ICD-9-CM diagnosis codes:	Code Description
476.0	Chronic laryngitis
493.10	Intrinsic asthma, unspecified
493.11	Intrinsic asthma with status asthmaticus
493.12	Intrinsic asthma with (acute) exacerbation
493.20	Chronic obstructive asthma, unspecified
493.21	Chronic obstructive asthma with status asthmaticus
493.22	Chronic obstructive asthma with (acute) exacerbation
493.82	Cough variant asthma
507.0	Pneumonitis due to inhalation of food or vomitus

530.81	Esophageal reflux
770.18	Other fetal and newborn aspiration with respiratory symptoms
770.81	Primary apnea of newborn
770.82	Other apnea of newborn
770.83	Cyanotic attacks of newborn
770.84	Respiratory failure of newborn
770.85	Aspiration of postnatal stomach contents without respiratory symptoms
770.86	Aspiration of postnatal stomach contents with respiratory symptoms
770.87	Respiratory arrest of newborn
770.88	Hypoxemia of newborn
770.89	Other respiratory problems after birth
779.81	Neonatal bradycardia
780.57	Unspecified sleep apnea
786.03	Apnea
786.07	Wheezing
786.1	Stridor
786.2	Cough
V12.61	Personal history, Pneumonia (recurrent)

ICD-10 Diagnosis Codes

ICD-10-CM Diagnosis codes:	Code Description
G47.30	Sleep apnea, unspecified
J37.0	Chronic laryngitis
J44.0	Chronic obstructive pulmonary disease with acute lower respiratory infection
J44.1	Chronic obstructive pulmonary disease with (acute) exacerbation
J44.9	Chronic obstructive pulmonary disease, unspecified
J45.20	Mild intermittent asthma, uncomplicated
J45.21	Mild intermittent asthma with (acute) exacerbation
J45.22	Mild intermittent asthma with status asthmaticus
J45.30	Mild persistent asthma, uncomplicated
J45.31	Mild persistent asthma with (acute) exacerbation
J45.32	Mild persistent asthma with status asthmaticus
J45.40	Moderate persistent asthma, uncomplicated
J45.41	Moderate persistent asthma with (acute) exacerbation
J45.42	Moderate persistent asthma with status asthmaticus
J45.50	Severe persistent asthma, uncomplicated
J45.51	Severe persistent asthma with (acute) exacerbation
J45.52	Severe persistent asthma with status asthmaticus
J45.991	Cough variant asthma
K21.0	Gastro-esophageal reflux disease with esophagitis
K21.9	Gastro-esophageal reflux disease without esophagitis
P22.8	Other respiratory distress of newborn
P22.9	Respiratory distress of newborn, unspecified
P24.30	Neonatal aspiration of milk and regurgitated food without respiratory symptoms
P24.31	Neonatal aspiration of milk and regurgitated food with respiratory symptoms
P24.81	Other neonatal aspiration with respiratory symptoms
P28.2	Cyanotic attacks of newborn
P28.3	Primary sleep apnea of newborn
P28.4	Other apnea of newborn
P28.5	Respiratory failure of newborn

P28.81	Respiratory arrest of newborn
P28.89	Other specified respiratory conditions of newborn
P29.12	Neonatal bradycardia
P84	Other problems with newborn
R05	Cough
R06.1	Stridor
R06.2	Wheezing
R06.81	Apnea, not elsewhere classified
Z87.01	Personal history of pneumonia (recurrent)

Description

Acid reflux is the flow of stomach acid into the esophagus, most often caused by a dysfunction of the gastroesophageal sphincter with resulting disease etiology termed acid reflux disease or gastroesophageal reflux disease (GERD). Acid reflux has been cited as the contributing cause of heartburn, acid regurgitation, peptic esophagitis, Barrett's esophagus, as well as esophageal stricture. It is also considered a strong contributor to asthma, posterior laryngitis, chronic cough, dental erosions, chronic hoarseness, pharyngitis, subglottic stenosis or stricture, nocturnal choking, and recurrent pneumonia. GERD is usually diagnosed by symptoms and endoscopy, and is treated with a trial of medical management (usually a proton pump inhibitor) to reduce the production of acid in the stomach.

If symptoms do not respond to medical management, a more definitive diagnosis is sought, using esophageal pH monitoring, although definitive correlation between patient symptoms and acid reflux is clinically presumed but not absolutely proven. To measure the acidity of fluid within the esophageal contents, esophageal pH monitoring is done through the use of a nasogastric tube with a pH electrode attached to its tip, placed in the upper margin of the lower esophageal sphincter. Every instance of acid reflux, as well as its duration and pH, is recorded on an adjacent data logger worn by the patient, and indicates gastric acid reflux over a 24-hour period.

Another approach is wireless pH monitoring. A catheter-free temporarily implanted capsule (which replaces the need for a nasogastric tube) is inserted into the esophageal mucosa via endoscopy and records pH levels wirelessly for up to 48 hours, transmitting them via radio frequency telemetry to a receiver worn on the patient's belt.

An example of a wireless pH monitoring capsule is the Bravo™ developed by Medtronic but acquired by Given Imaging. All esophageal pH monitoring devices for the purpose of diagnosing GERD are considered investigational regardless of the commercial name, the manufacturer or FDA approval status except as noted in the policy statement.

It has been suggested that measuring gastric pH impedance will provide additional information to measure the severity and incidence of GERD with the theory that the difference between reflux and functional disorders is improved. However, no high quality evidence exists to substantiate this hypothesis in clinical trials.

An example of a catheter-based pH impedance monitor is the VersaFlex™ by Given Imaging. All catheter-based pH impedance devices for the purpose of diagnosing GERD are considered investigational regardless of the commercial name, the manufacturer or FDA approval status except as noted in the policy statement.

Summary

Catheter-Based Monitoring

Esophageal pH monitoring for 24 hours using catheter-based systems has been an established technology, primarily used in patients with gastroesophageal reflux disease (GERD) that has not responded symptomatically to a program of medical therapy (including proton pump inhibitors [PPIs]) or in patients with refractory extra-esophageal symptoms. Although it is an established technology, aspects of

its use as a diagnostic test for GERD are problematic and thus make it difficult to determine its utility, as well as the utility of potential alternative tests.

There is no independent reference standard for GERD for certain clinically relevant populations. Traditional pH monitoring has been evaluated in patients with endoscopically diagnosed GERD, where it has been shown to be positive 77-100% of the time. (1) However, in clinically defined but endoscopically negative patients, the test is positive from 0-71% of the time. In normal control populations, traditional pH monitoring is positive in 0-15% of subjects. Thus the test is imperfectly sensitive and specific in patients with known presence or absence of disease. Therefore, the use of esophageal pH monitoring for 24 hours is limited to the situations and populations described in the policy statement.

Esophageal pH monitoring using wired or wireless devices can record the pH of the lower esophagus for a period of one to several days. These devices may aid in the diagnosis of gastroesophageal reflux disease (GERD) in patients who have an uncertain diagnosis after clinical evaluation and endoscopy. Therefore, the use of wired or wireless esophageal pH monitoring may be considered medically necessary in the patient meeting the above criteria.

Given the lack of a gold standard, evidence supporting the use of impedance-pH testing is lacking. While impedance-pH testing may increase positive tests or diagnostic yield, the potentially increased sensitivity may be accompanied by a decrease in specificity and the net effect on patient management and patient outcomes is not certain. Therefore, impedance-pH testing is considered not medically necessary.

Policy History

Date	Action
9/2014	New references added from BCBSA National medical policy.
5/2014	Updated Coding section with ICD10 procedure and diagnosis codes, effective 10/2015.
4/2014	Coverage for CPT codes 91010 and 91013 clarified.
12/2013	BCBSA National medical policy review. Removed "24-hour" from the policy statement on impedance monitoring; catheter-based impedance monitoring for any length of time is considered not medically necessary. Effective 12/1/2013. Removed ICD-9 diagnosis codes 427.89, 462; 464.00; 464.01; 486; 493.00; 493.01; 493.02; 493.81; 493.90; 493.91; 493.92 as these do not meet the intent of the policy. ICD-9 diagnosis code V12.61 was added as it meets the intent of the policy.
2/2013	BCBSA National policy review Changes to policy statements. Effective 2/4/2013
11/2011-4/2012	Medical policy ICD 10 remediation: Formatting, editing and coding updates. No changes to policy statements.
12/1/2011	BCBSA National medical policy review. Changes to policy statements.
11/2010	Reviewed - Medical Policy Group - Gastroenterology, Nutrition and Organ Transplantation. No changes to policy statements.
8/2010	BCBSA National medical policy review. Changes to policy statements.
11/2009	Reviewed - Medical Policy Group - Gastroenterology, Nutrition and Organ Transplantation. No changes to policy statements.
11/2008	Reviewed - Medical Policy Group - Gastroenterology, Nutrition and Organ Transplantation. No changes to policy statements.
12/01/2008	New policy, effective 12/01/2008, describing covered and non-covered indications.

Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:

[Medical Policy Terms of Use](#)

[Managed Care Guidelines](#)

[Indemnity/PPO Guidelines](#)

[Clinical Exception Process](#)

[Medical Technology Assessment Guidelines](#)

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